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- (71) Applicant (for all designated States except US):  
**PROSPECT PHARMA** [US/US]; 9108-A, Guilford  
Road, Columbia, Maryland 21046 (US).
- (72) Inventors; and  
(75) Inventors/Applicants (for US only): **BROWN, Jonathan,**  
**Miles** [GB/US]; 13912 North Gate Drive, Silver Spring,  
Maryland 20906 (US). **HOMANS, Steven, W.** [GB/GB]; 3  
Hilton Mews, Bramhope, Leeds Yorkshire LS169LF (GB).

**CHAYKOVSKY, Michael** [US/US]; 9217 Quick Fox, Co-  
lumbia, Maryland 21045 (US). **MURRAY, Jenny, Hong**  
[US/US]; 9717 Dixie Ridge Terrace, Gaithersburg, Mary-  
land 20882 (US).

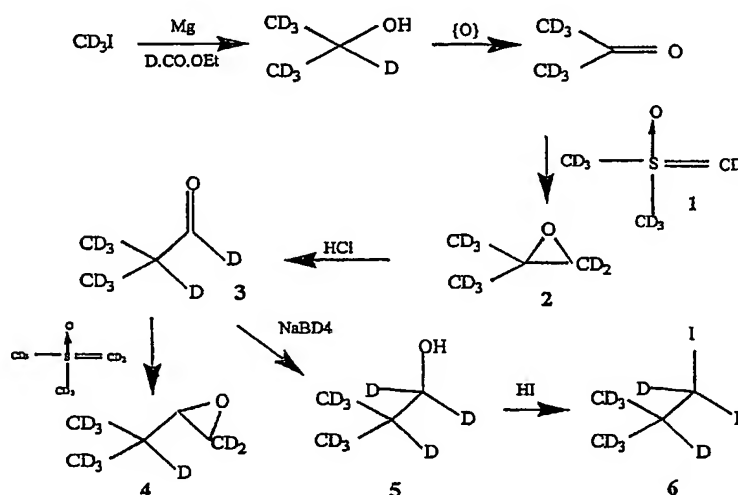
(74) Agents: **FIGG, E., Anthony** et al.; 1425 K Street, N.W.,  
Suite 800, Washington, DC 20005 (US).

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(54) Title: SIDE CHAIN DEUTERATED AMINO ACIDS AND METHODS OF USE



SCHEME 2

(57) Abstract: Protein structural determination using NMR techniques is improved through use of proteins in which one or more amino acids in the peptidic sequence are isotopically enriched in the sidechain with  $2\text{H}$  and are isotopically enriched on the backbone with  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $2\text{H}$  or any combination thereof. This invention provides amino acids isotopically enriched as above, which can be used to synthesize isotopically labeled proteins and peptides for protein structural determinations by NMR, and methods for their synthesis. Other embodiments of the invention include peptidic molecules, media for peptidic molecule expression, methods of making isotopically labeled peptidic molecules and methods of determining structural information of a peptidic molecule.



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